

## Response to Call for Evidence

### The House of Lords Select Committee on the European Union

#### Sub-Committee B Internal Market, Infrastructure and Employment

#### Civil use of remotely piloted aircraft systems (RPAS) in the EU

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#### The Honourable Company of Air Pilots

The Company was established as a Guild in 1929 to ensure that pilots and navigators of the (then) fledgling aviation industry were accepted and regarded as professionals. From the beginning, the Guild was modelled on the lines of the City of London Livery Companies, which were originally established to protect the interests and standards of those involved in their respective trades or professions. In 1956 the Guild was formally recognised as a Livery Company and in 2014 it was granted a Royal Charter in the name of The Honourable Company of Air Pilots.



Today, the Company's principal activities are centred on sponsoring and encouraging action and activities designed to ensure that aircraft are piloted and navigated safely by individuals who are highly competent, self-reliant, dependable and respected. The Company fosters the sound education and training of air pilots from the initial training of the young pilot to the specialist training of the more mature. Through charitable activities, education and training, technical committee work, aircrew aptitude testing, scholarships and sponsorship, advice and recognition of the achievements of fellow aviators world-wide, the Company keeps itself at the forefront of the aviation world.

The Company is honoured to have this opportunity to respond to the Call for Evidence by the House of Lords Select Committee on the European Union - Sub-Committee B Internal Market, Infrastructure and Employment - Civil use of remotely piloted aircraft systems (RPAS) in the EU. Each of the Committee's questions, together with our answer, is set out below:

**1. Do you agree with the priorities identified in the European Commission's Communication for opening the aviation market to the civil use of RPAS? Are there other priorities which should have been included?**

1.1 RPAS development has progressed as fast as military requirements demanded and the enabling technologies allowed but within a regulatory vacuum. The Air Pilots welcome the Commission's recognition that an enabling regulatory structure is required for RPAS operation to extend their use into the manned aviation environment. Our view is that:

1.2 RPAS regulations should require that the unmanned nature of an air vehicle is transparent (not apparent) to manned air vehicle pilots operating within the same air space. This principle does not appear within the European Commission's Communication.

1.3 Safety standards for each RPAS class/operating environment should reflect the achieved (as opposed to theoretical) safety standards of their equivalent manned aircraft in class. This means a small RPAS operating in the open FIR should in general match General Aviation (GA) safety levels while any RPAS in controlled airspace should match airliner safety levels. Our published papers on 'Equivalence' for GA-type RPAS vehicles and operations, using data from UK and North America respectively are available at <http://www.airpilots.org/file/737/sense-and-avoid-safety-level-requirements-for-unmanned-and-remotely-piloted-aircraft.pdf>

and

<http://www.airpilots.org/file/917/uas-access-to-national-airspace-paper.pdf>

One of the EU's priorities, not spelt out in the European Commission's Communication, must be to establish what safety levels are actually achieved already.

1.4 Regulation must reflect and address the potential range of RPAS sizes and activities. Regulation by size alone could threaten manned commercial aviation safety if a small, lightly regulated RPAS entered controlled airspace. Equally, draconian rules applied to a larger RPAS that was only operated over the sea/sparsely populated areas would close off potential RPAS development areas to EU industry and operators.

**2. What are the advantages and disadvantages of regulating RPAS at the national, EU or international levels, for example in the International Civil Aviation Organization (ICAO)? Are the EU's actions, proposed or otherwise, consistent with developments in non-EU countries, for example in the United States?**

2.1 RPAS operation must integrate with manned aviation, which is truly global. In manned aviation, consistency across international boundaries is an important aviation safety enhancer. This will remain true when RPAS are introduced. The aspiration should be a single global regulation framework. In terms of manned aviation regulation, FAA and EASA predominate and most states adopt or copy the processes and practices of one or the other agency. ICAO does provide an over-arching framework but it has yet to consolidate the differences embedded within FAA and EASA approaches; those differences are still a source of confusion for pilots who fly internationally.

2.2 From a purely safety perspective, RPAS legislation would start with a single unified approach across all aviation regulators. However, achieving international agreement would incur significant delays<sup>1</sup> that must be weighted against the pressing need for certainty in and control of the un-manned sector. Nonetheless, the EU should ensure that EASA seeks to match/mirror RPAS regulatory developments by FAA to the greatest extent possible. Aside from the safety driver, this will also simplify EU manufactures and operators penetration of North American markets.

### **3. In which new or innovative ways do you think RPAS will be used in the future?**

3.1 As soon as regulation permits, we would expect to see extensive demand for/use of small (up to the size of microlight aircraft) surveillance platforms for policing and utility inspection, largely replacing manned helicopters. Once public privacy concerns are resolved, SESAR Joint Undertaking (SJU) expectation that un-manned vehicles will not be permitted to operate over built up areas<sup>2</sup> will undoubtedly be challenged to facilitate this. Other applications could include:

- 3.1.1. Paramedic advance attendance (a fly-ahead vehicle surveys the site and injuries to allow paramedic preparation/remote doctors to be ready prior to paramedic arrival.)
- 3.1.2. Property Survey (boundaries, heat insulation)
- 3.1.3. Wildlife survey (e.g. seabird nesting sites, migration patterns)
- 3.1.4. Rural area security (large area surveillance by day and night)
- 3.1.5. Coastal monitoring (counter illegal immigration/smuggling)
- 3.1.6. Haulage vehicle monitoring (counter illegal immigration)
- 3.1.7. Remote rural Broadband/Radio/TV (network relay broadcast)
- 3.1.8. Road monitoring, patrol and signage control
- 3.1.9. Pipeline inspection (internal and external)
- 3.1.10. Sewage inspection
- 3.1.11. Course Mapping (e.g. providing rider's eye view of 3-day Event Cross Country Course or drivers eye view of a Motor Rally stage)
- 3.1.12. Security surveillance of out-of-use buildings by day and by night.

### **4. What is your view of the estimate by the AeroSpace and Defence Industries Association of Europe that RPAS activities will create about 150,000 jobs in the EU by 2050? What are the factors that might restrict the growth of the RPAS market?**

4.1 In the manned General Aviation sector, over-burdensome certification, equipment or maintenance requirements escalate the cost of ownership and reduce activity. Equivalent RPAS operating in a similar sector would be affected similarly. RPAS regulation must be correctly sized to the class of vehicle/role of vehicle so that safety is sustained appropriately in all cases.

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<sup>1</sup> We have seen relatively simple and zero cost safety initiatives take some 14 years to achieve international agreement.

<sup>2</sup> [http://www.sesarju.eu/sites/default/files/documents/events/rpas-workshop/RPAS-workshop-2014-RPAS\\_Definition\\_Phase.pdf](http://www.sesarju.eu/sites/default/files/documents/events/rpas-workshop/RPAS-workshop-2014-RPAS_Definition_Phase.pdf)

**5. Will the existing competences of Member States for the safety of military and civil aircraft, as well as for more general issues such as the allocation and use of radio spectrum, be impacted by the proposed changes in the remit of the European Aviation Safety Agency (EASA)?**

5.1 Yes. Member States' appetites for approving RPAS operations already vary; unless each Member State retains an opt-out from consolidated regulation, which would defeat its purpose, their competency in these areas will be reduced.

5.2 The drive to facilitate RPAS operation within EU airspace must be balanced against Member States' military training requirements so as not to compromise individual or collective military capabilities.

**6. Are the existing data protection, liability and insurance regimes at EU and Member State levels sufficient to address the concerns raised by the potential greater use of RPAS, or are changes required?**

6.1 With the current regulatory vacuum, amateur RPAS operators have placed their (uninsured) vehicle in the same piece of sky as commercial airliners, without the slightest understanding of either the potential consequences or the law. While the public might be expected to raise concerns over the threat to privacy posed by increasing use of RPAS, increasing public awareness must be exploited to ensure wider awareness of aviation law.

6.2 RPAS regulation must address and assure operator competency so that any subsequent deficit is identifiable. The role and responsibility of a manned aircraft Captain has been established over many years and is clearly understood. In contrast, the responsibility chain for an RPAS, which may have a Mission Commander, a Pilot and a Sensor Operator with the ability to adjust vehicle flight path all working in the same command centre (or even in different command rooms), is not established traditionally and can vary with vehicle type, vehicle role and operating company. Current liability rules do not adequately address this, so regulation must provide clarity on who carries ultimate legal responsibility for any adverse event and damage. It is also important that insurance practice is consistent across the EU.

6.3 Except in exceptional circumstances (usually where an aircraft has been circling a house for an extended period), the public do not raise invasion of privacy objections over light aircraft flying. In contrast, they are cited as a major concern for smaller RPAS that can carry high definition cameras and observe through house or high-rise apartment windows. It is not apparent that existing national or EU law is sufficient to combat the potential nuisance this represents. As the European Commission's Communication mentions, a legal framework that protects the public from unwarranted intrusion of privacy but also permits appropriately authorised information gathering by the security forces must be developed in parallel with regulation that enables wider use of RPAS.

6.4 Since RPAS can range in size from something that fits in the palm of the hand to a multi-seat business jet and beyond, it will be important to avoid unnecessary leakage of

RPAS rules into the model flying community. This will ensure a clear delineation between hobbyists and those who are professional RPAS operators with the operational and legal privileges and responsibilities that will entail.

6.5 Sanctions for inappropriate behavior by RPAS operators/pilots/commanders should be framed in recognition that, unlike the Captain of a manned aircraft, whose fate depends on the successful resolution of any unexpected event, the RPAS 'Captain' remains on the ground and is able to access a myriad of advice not available to pilot sat in the flying machine.

**7. Is EU research and development funding for RPAS sufficiently targeted towards the most important issues, for example, getting the airspace regulatory framework right, as against improving the limited airworthiness of today's small and lightweight RPAS?**

7.1 To date, military RPAS programme funding has focussed on command and control and military utility, rather than achieving safety standards commensurate with integration into the manned civil aviation environment or even operation over built-up areas. The public perceives, quite correctly, that airliners that fly are safe. It is then easy to conflate 'it flies' with 'it is safe'. The high RPAS accident rates in military use are attributed variously to poor operator behaviour and airworthiness standards, neither of which would stand scrutiny in manned aviation. This indicates that much work remains in both the areas of regulation and of unmanned vehicle airworthiness. The successful deployment of RPAS depends as much (if not more so) on achieving the appropriate levels of safety through design redundancy as it does on appropriate enabling regulation. Both must be afforded research and funding support.

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